SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company	PHILLIPS EXPLORATION, L.C.
Well	HERMAN - RUDER #1-6
Field	WILDCAT
County	TREGO
State	KANSAS

Company PHILLIPS EXPLORATION, L.C.

Well HERMAN - RUDER #1-6

Field WILDCAT

County TREGO State KANSAS

Location: API # : 15-195-22770-0000

2640' FNL & 330' FWL

W/2 - W/2 - W/2

SEC 6 TWP 11S RGE 23W

Permanent Datum GROUND LEVEL Elevation 2303

Log Measured From KELLY BUSHING 5' A.G.L.

Drilling Measured From KELLY BUSHING

Other Services: CDL/CNL, MEL

Elevation: K.B. 2308, D.F. 2306, G.L. 2303

Date	4/27/12		
Run Number	ONE		
Depth Driller	4000		
Depth Logger	4000		
Bottom Logged Interval	3998		
Top Log Interval	00		
Casing Driller	8 5/8"@218'		
Casing Logger	218		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 2,000 PPM	
Density / Viscosity	9.4/59		
pH / Fluid Loss	10.5/6.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.950@72F		
Rmf @ Meas. Temp	.713@72F		
Rmc @ Meas. Temp	1.14@72F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.590@116F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	1:00 A.M.		
Maximum Recorded Temperature	116F		
Equipment Number	4010		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JIM PHILLIPS		

<<< Fold Here >>>

Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395

DIRECTIONS

WAKEENEY, KS. & I-70, 7N. ON HWY 283 TO "RD. B", 3W., 1/2 N. INTO

SUPERIOR WELL SERVICES

SUPERIOR
Hays,
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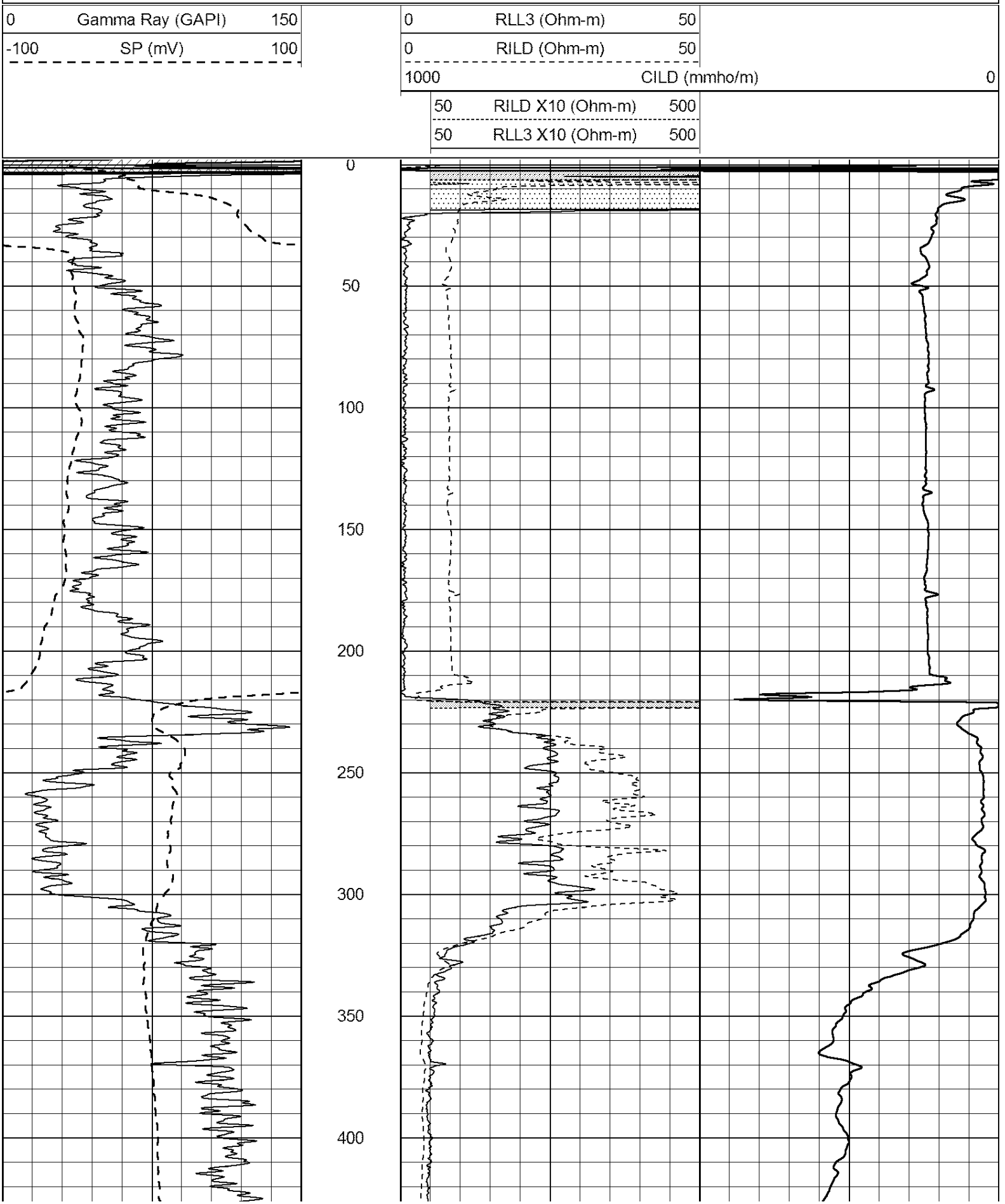
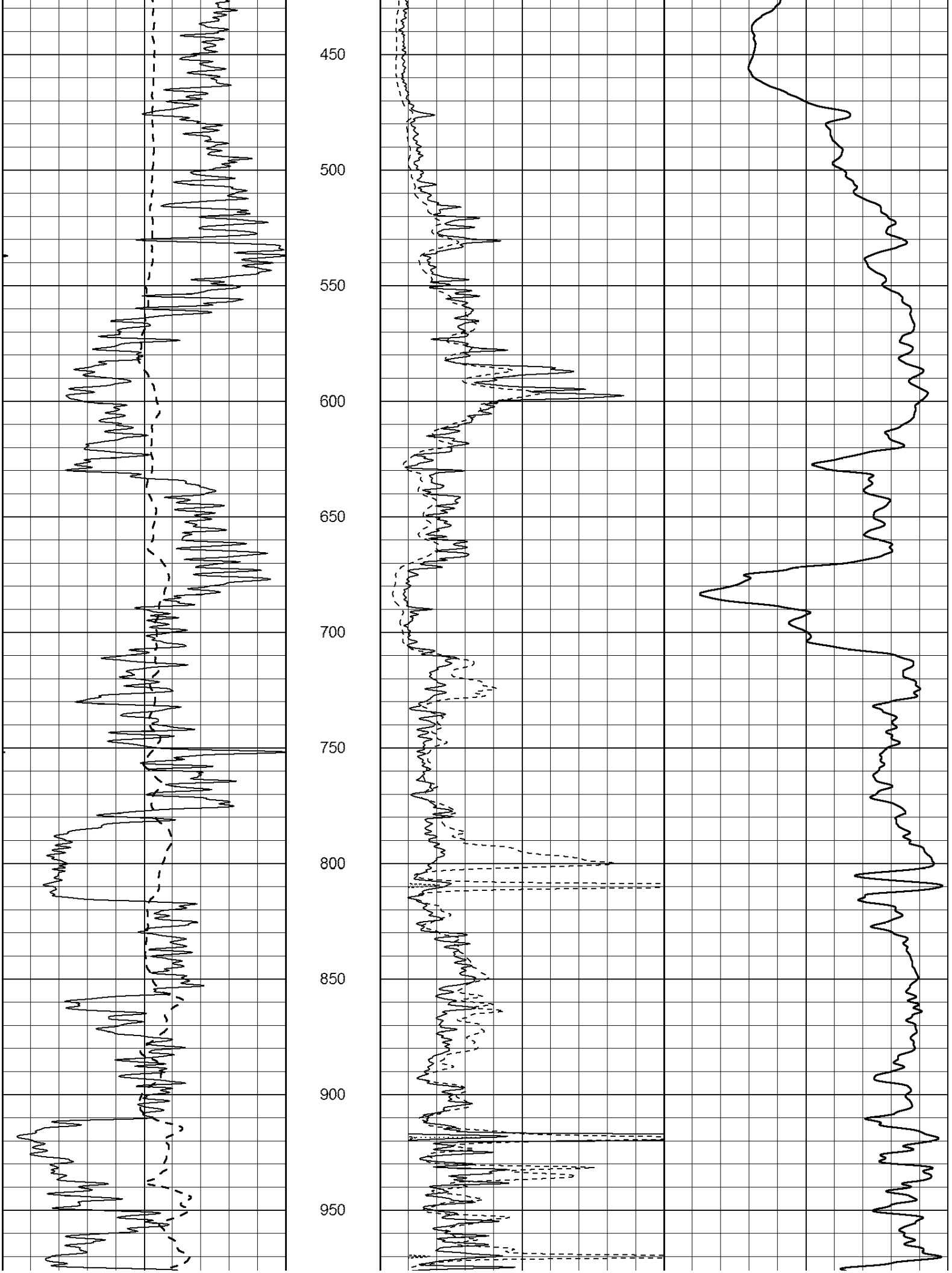
MAIN SECTION

Database File:	408756ddn.db
Dataset Pathname:	pass3.3
Presentation Format:	dil2
Dataset Creation:	Fri Apr 27 02:26:00 2012 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:600

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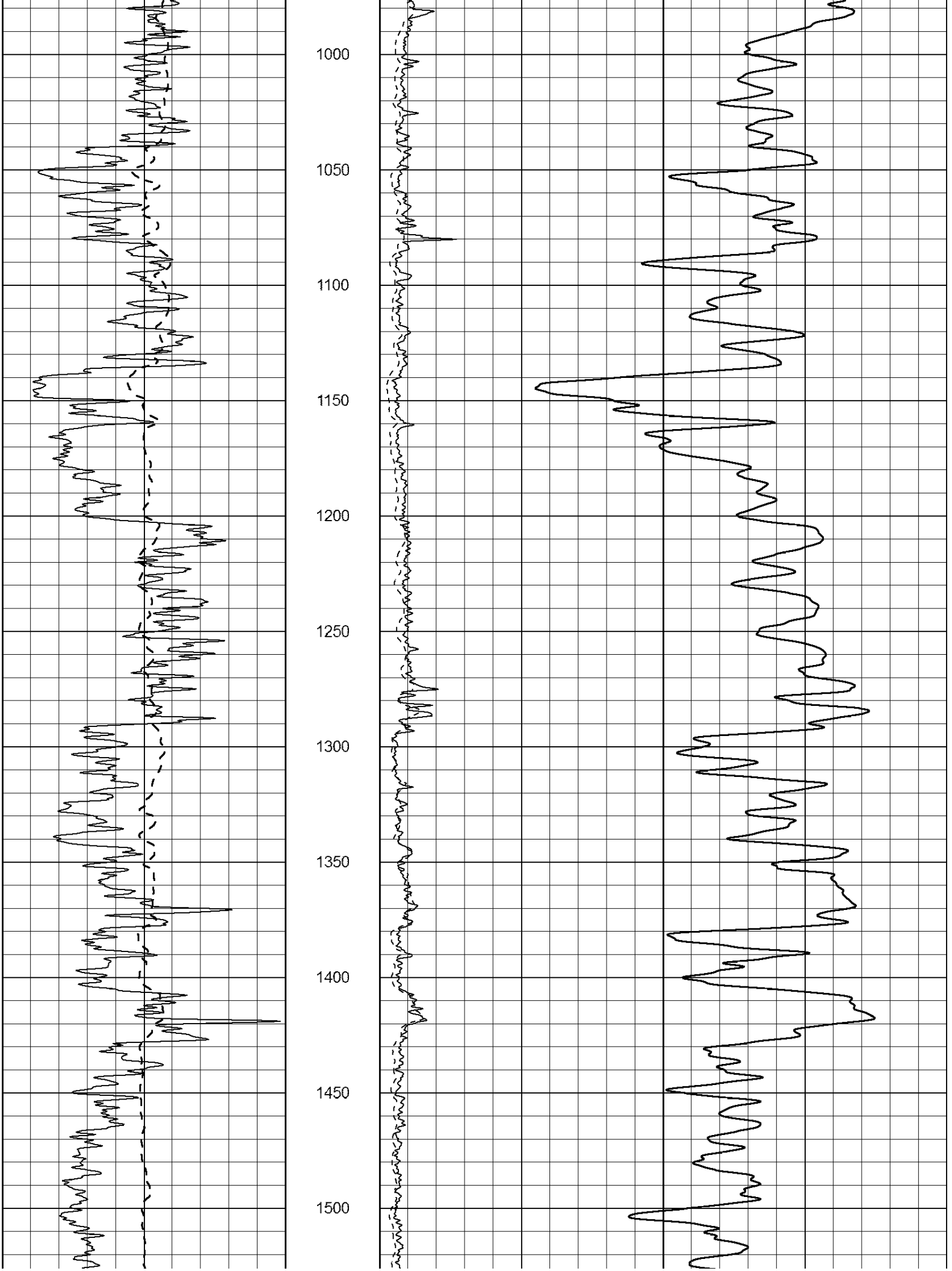
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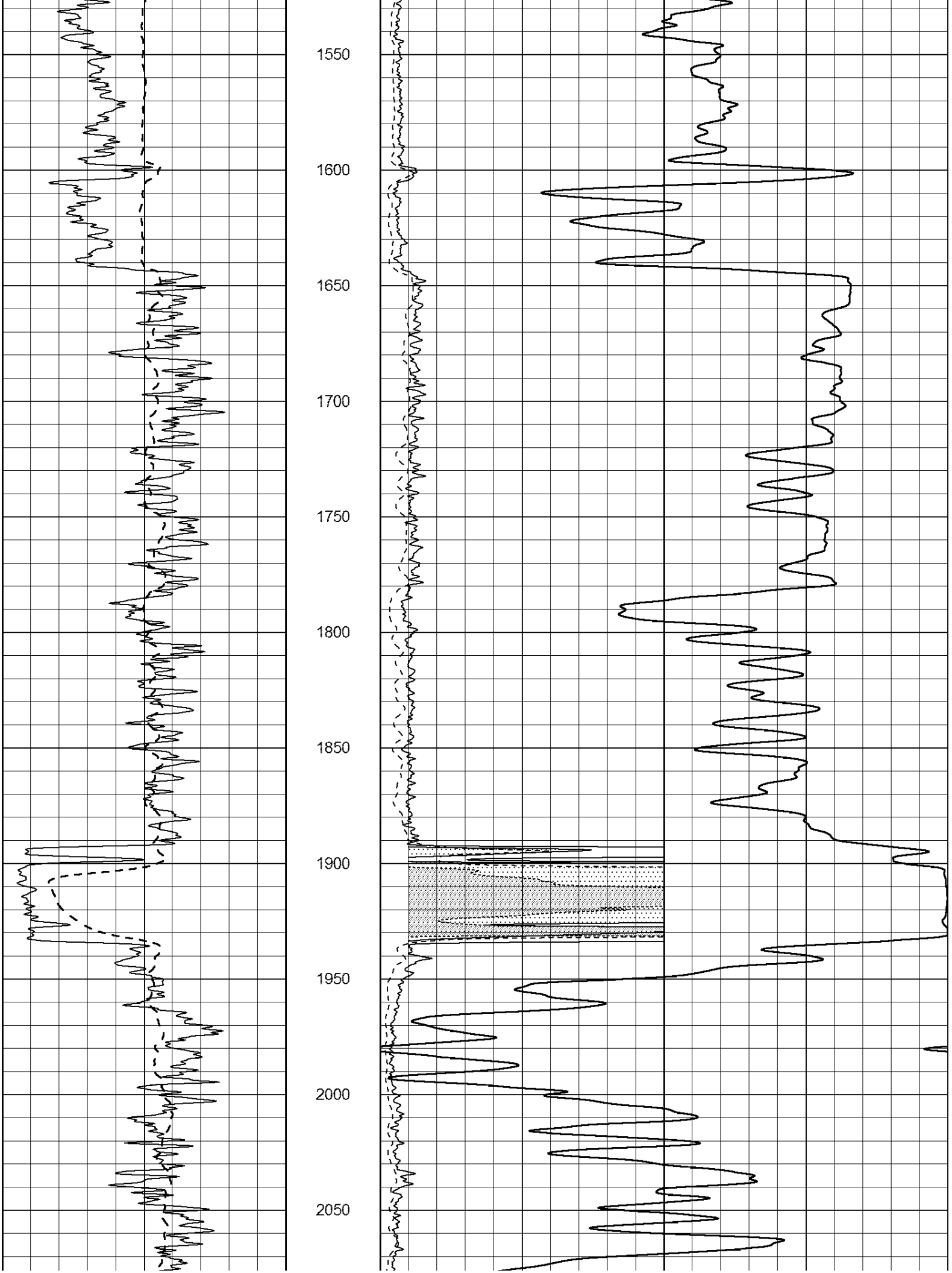
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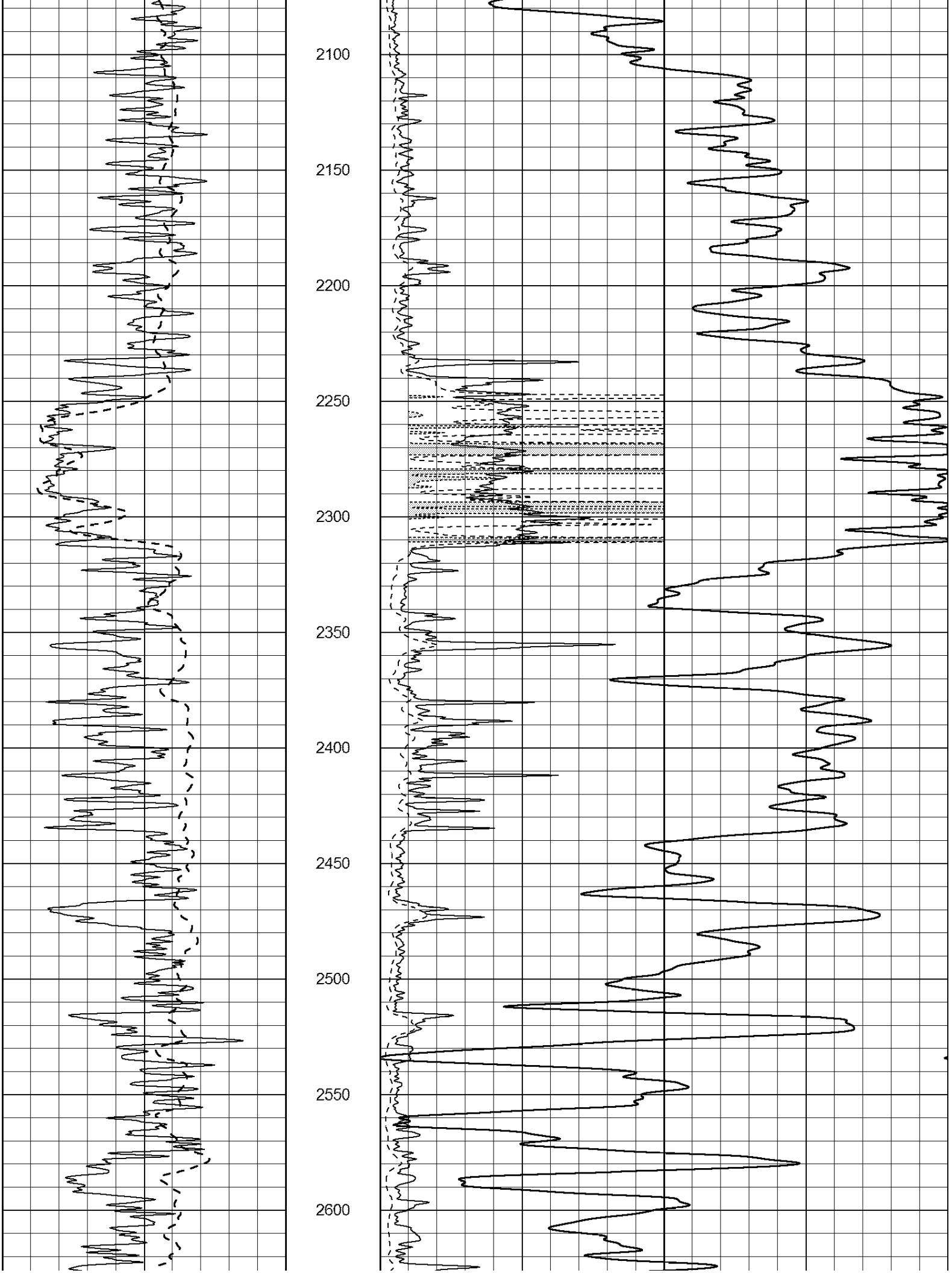
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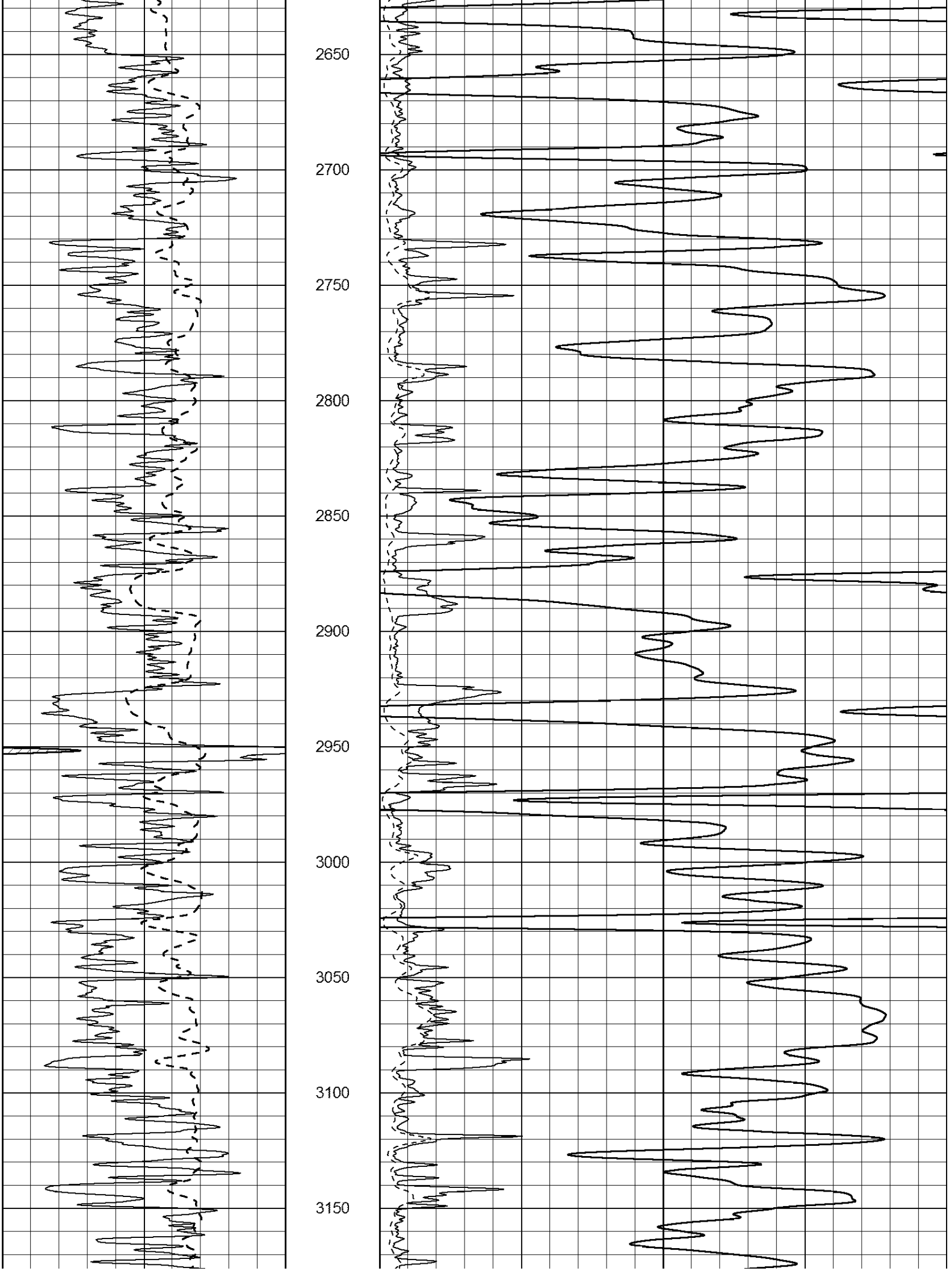
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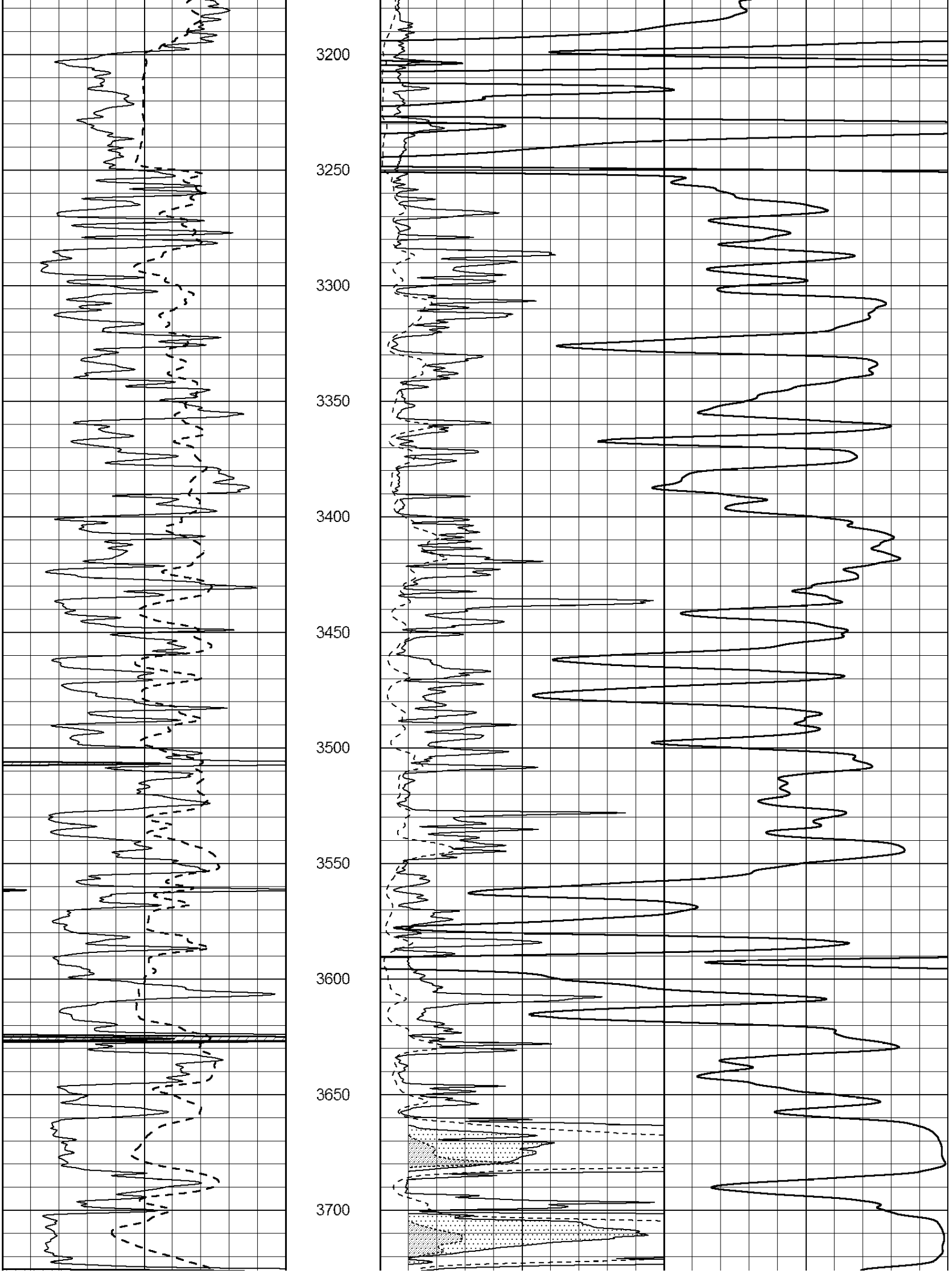
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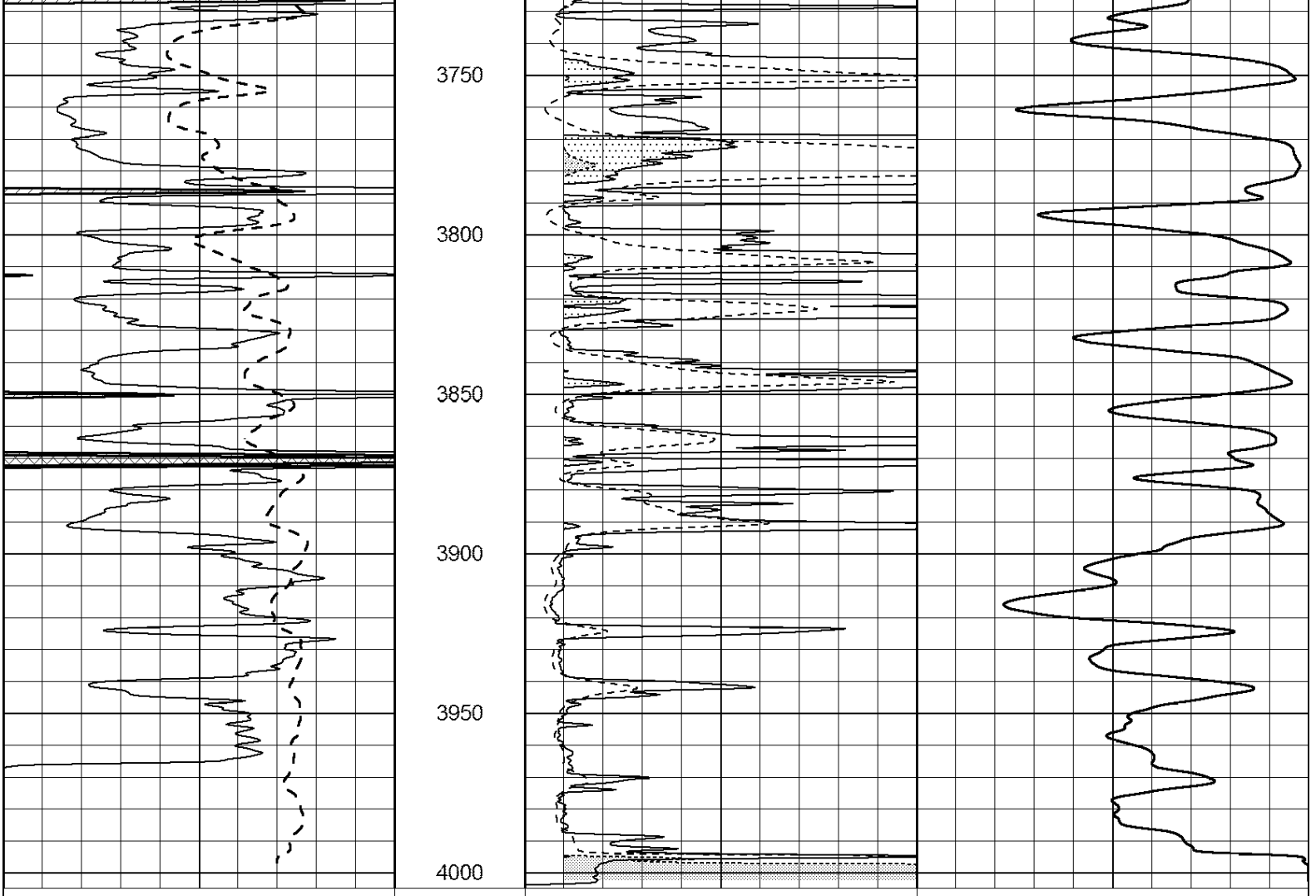

SUPERIOR
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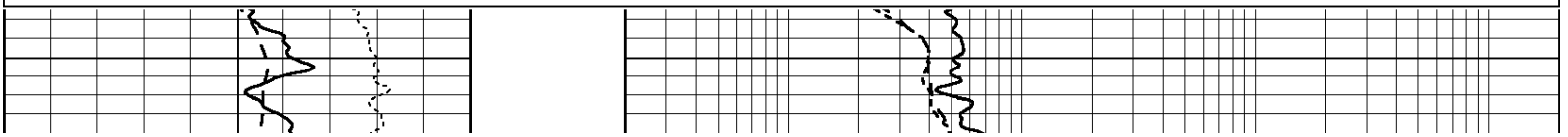
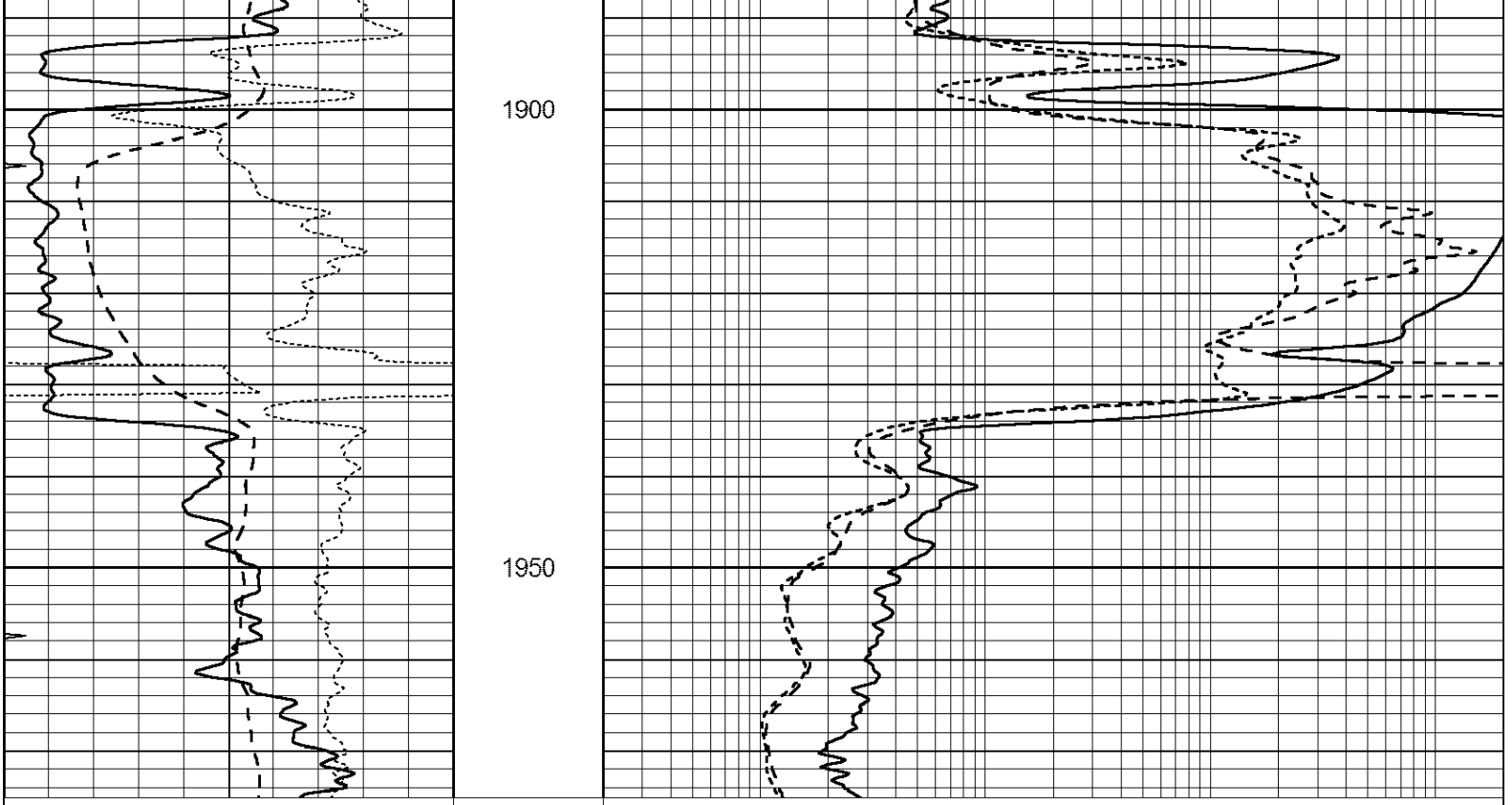
ANHYDRITE

Database File: 408756ddn.db
Dataset Pathname: pass3.4
Presentation Format: _dil
Dataset Creation: Fri Apr 27 02:26:40 2012 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

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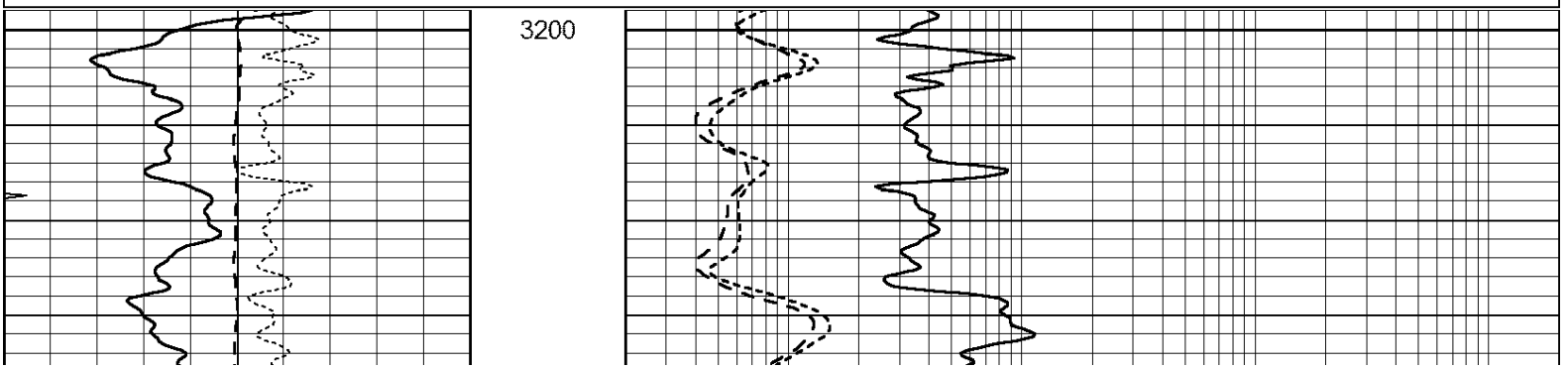
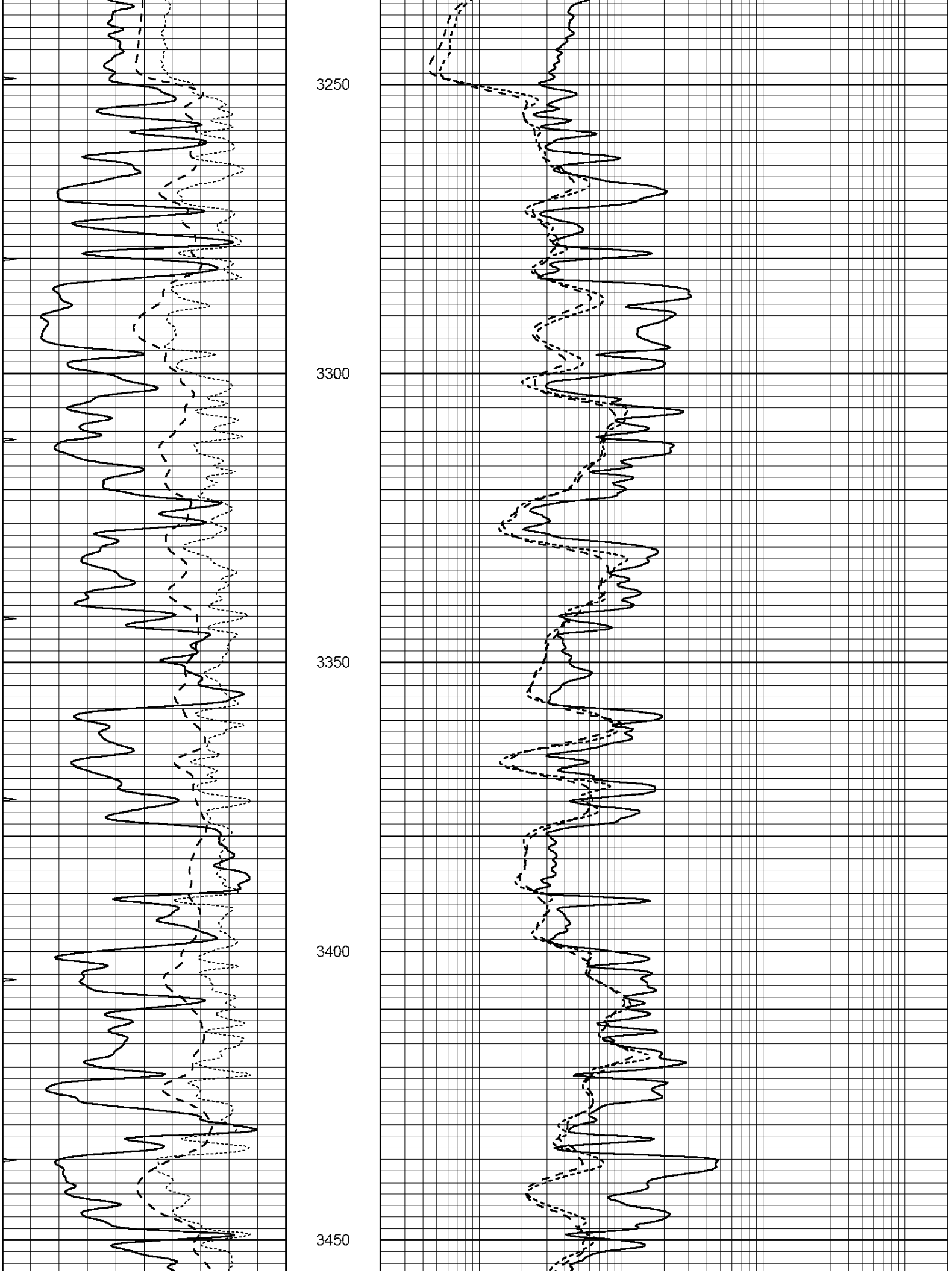
MAIN SECTION

Database File:	408756ddn.db
Dataset Pathname:	pass3.3
Presentation Format:	dil
Dataset Creation:	Fri Apr 27 02:26:00 2012 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

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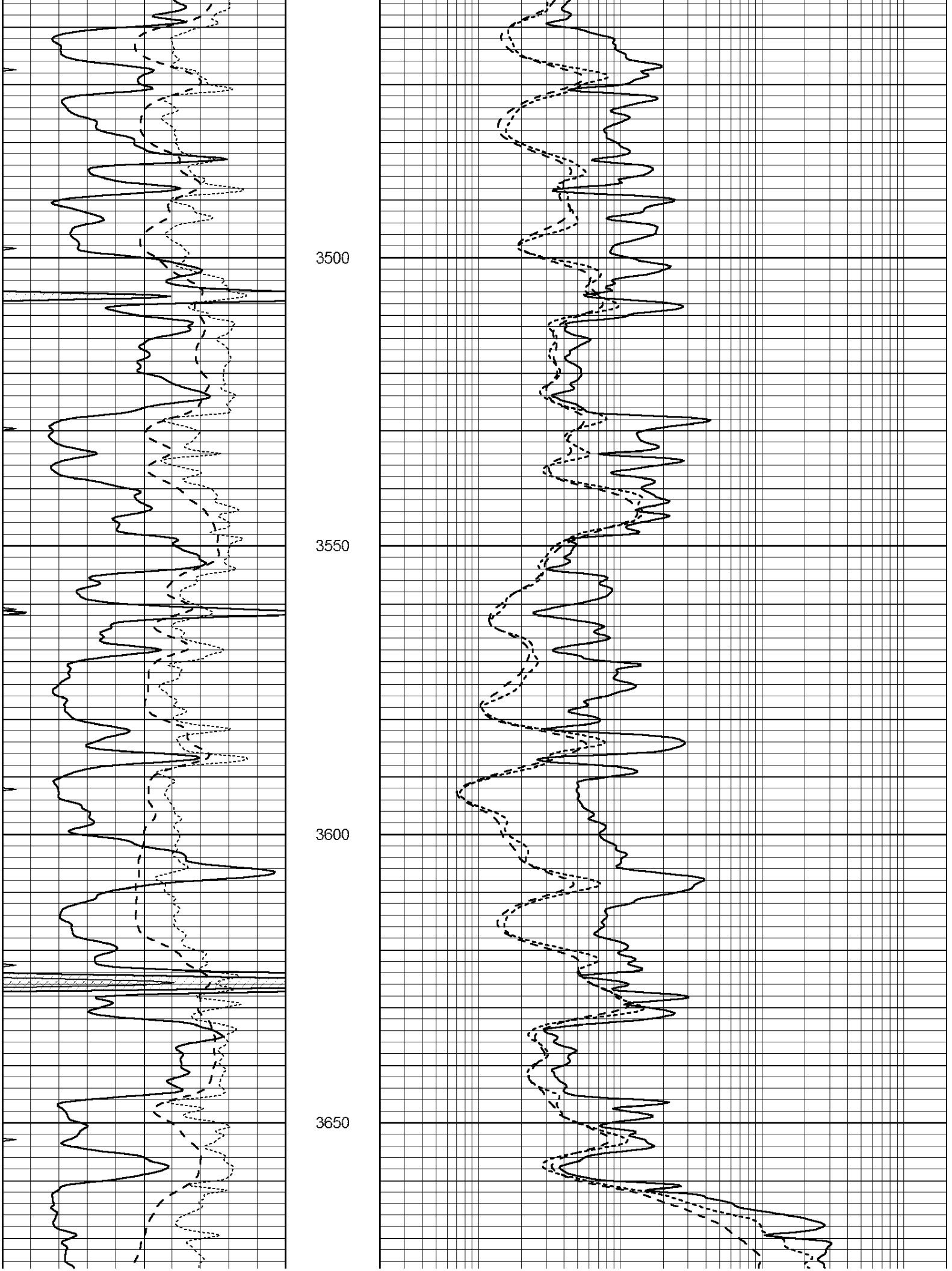
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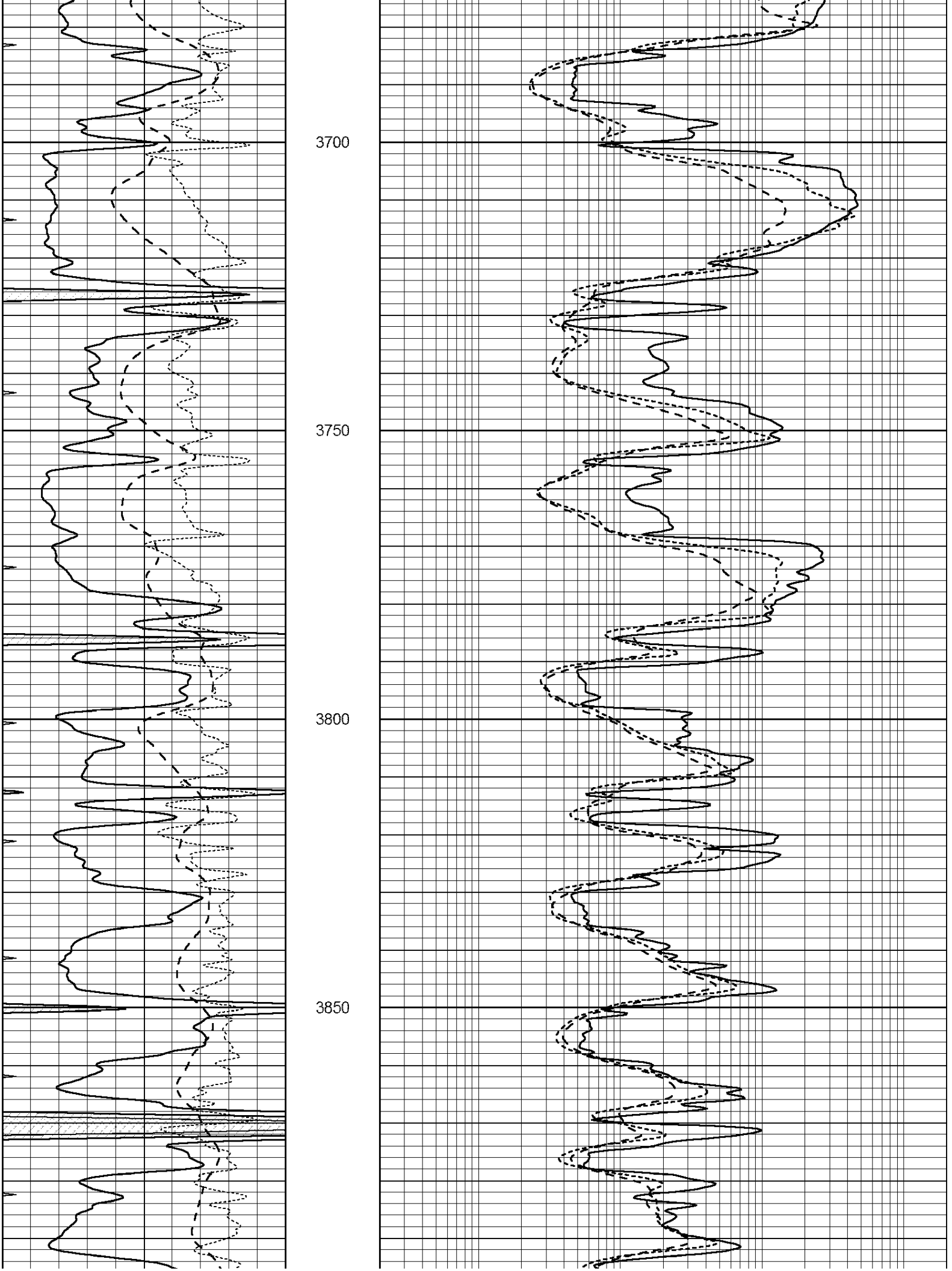
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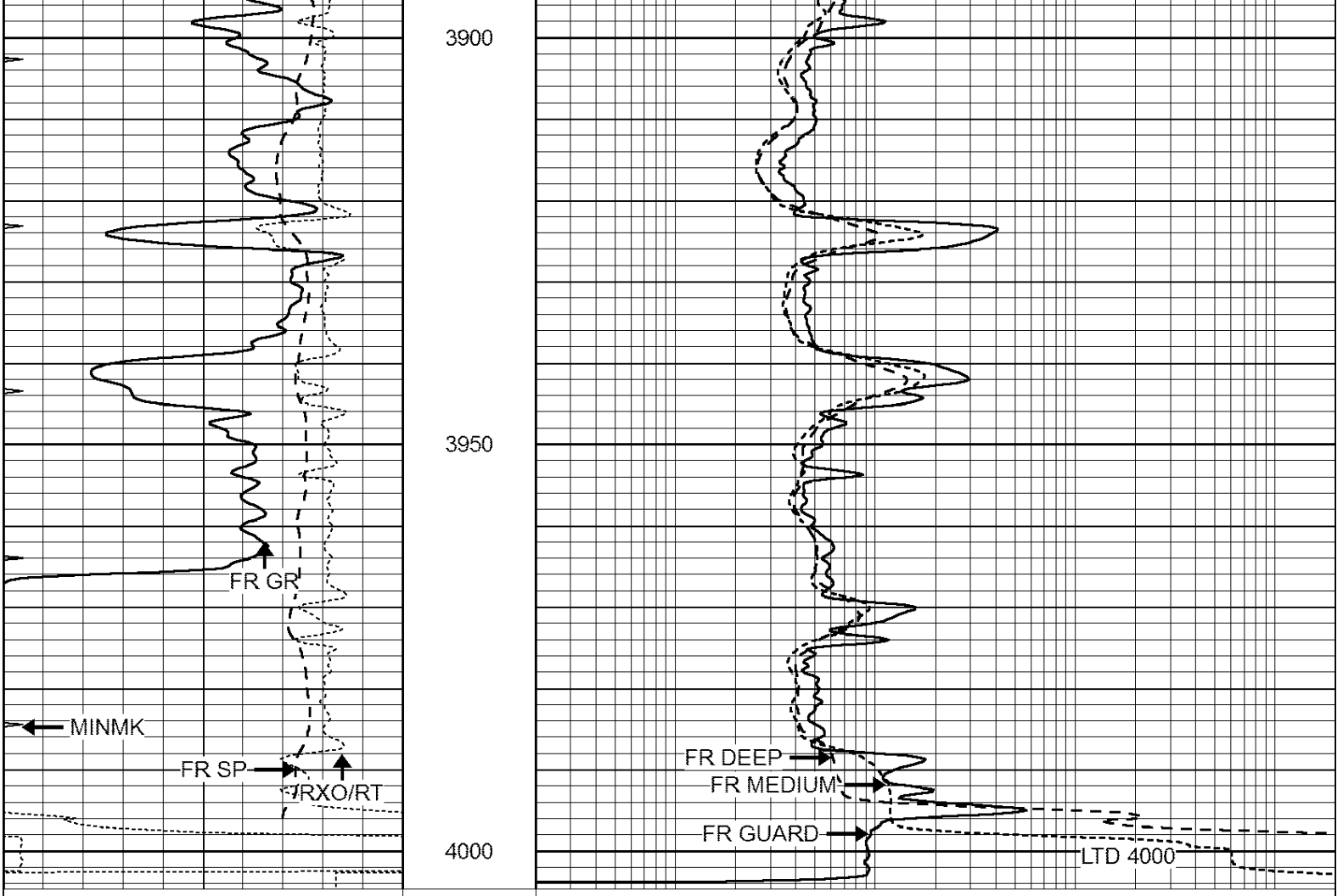

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

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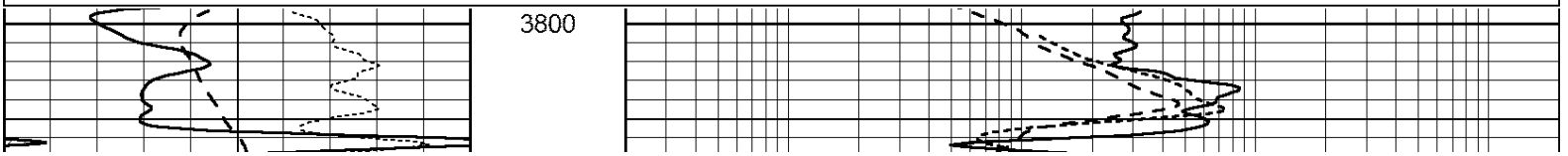
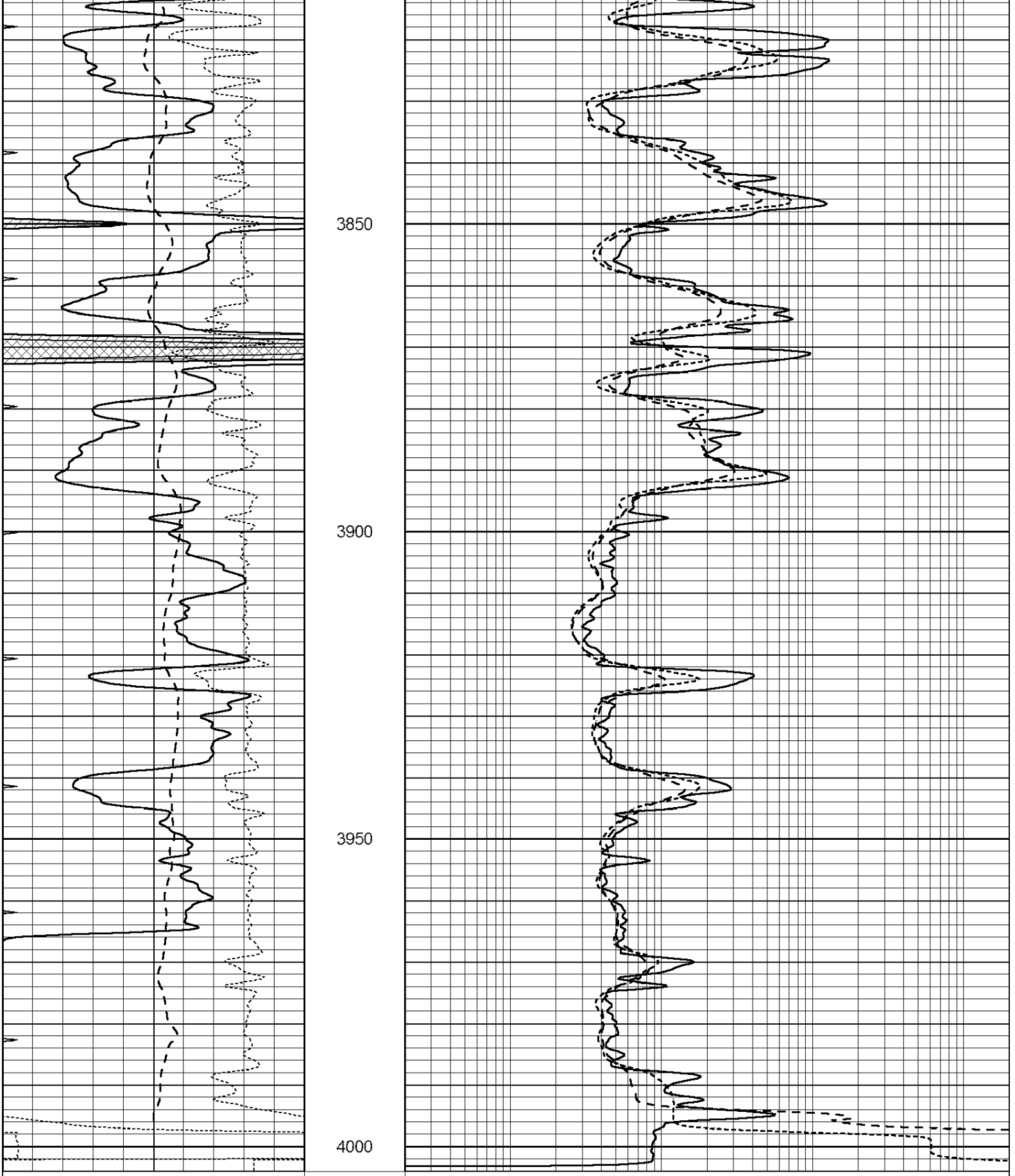
REPEAT SECTION

Database File: 408756ddn.db
Dataset Pathname: pass2.3
Presentation Format: dil
Dataset Creation: Fri Apr 27 01:17:24 2012 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 408756ddn.db
Dataset Pathname: pass3.3
Dataset Creation: Fri Apr 27 02:26:00 2012 by Calc Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: DIL4-GEAR
Performed: Fri Apr 27 01:14:54 2012

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.008	0.666	V	0.000	400.000	mmho/m	570.000	-3.000
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	560.000	1.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549

Litho Density Calibration Report

Serial: 003N Model: PRB
Performed Tue Sep 08 14:14:44 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

Caliper

	Readings	Reference
Low Ref	2.0	7.6
High Ref	4.0	15.0

Gain: 3.6 Offset: 0.5

Compensated Neutron Calibration Report

Serial Number: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Gamma Ray Calibration Report

Serial Number:	070559	
Tool Model:	OPEN_GR	
Performed:	Mon Apr 16 22:08:41 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.3000	GAPI/cps